

AMENDMENTS TO THE CLAIMS

Please amend the claims of the present application as set forth below. A status identifier is provided for each claim in a parenthetical expression following each claim number. Changes to the claims are shown by strikethrough (for deleted matter) or underlining (for added matter).

1. (Original) A method, comprising:

defining, by an absolute location, one or more geographical regions in which one or more fixed resources are located;

defining a location of each of the one or more fixed resources within a geographical region, the location of each fixed resource being a relative location that is defined relative to the absolute location of the geographical region in which the fixed resource is located; and

storing the relative location of each fixed resource in a hierarchical directory structure having one or more levels corresponding to the one or more geographical regions, the relative location of each fixed resource being stored in the directory level corresponding to the geographical region from which the relative location of the fixed resource is derived.

2. (Original) The method as recited in claim 1, wherein there are multiple geographical regions, and each geographical region is defined so that all but a largest geographical region are encompassed by at least one of the other geographical regions.

1 3. (Original) The method as recited in claim 2, wherein each geographical
2 region has a different size than the other geographical regions.

3
4 4. (Original) The method as recited in claim 1, wherein each of the one or
5 more hierarchical directory levels has a class name selected from the following
6 class names: country, state, territory, county, city, campus, building, area or floor.

7
8 5. (Original) The method as recited in claim 1, wherein the absolute
9 location is represented by latitude and longitude coordinates.

10
11 6. (Cancelled)

12
13 7. (Original) The method as recited in claim 1, wherein the relative
14 location is represented by linear unit coordinates in relation to a known absolute
15 location.

16
17 8. (Original) The method as recited in claim 1, wherein the location of
18 each of the one or more fixed resources is stored as an object with one or more
19 properties associated with the fixed resource.

20
21 9. (Original) The method as recited in claim 1, wherein the network
22 comprises more than one server, and the hierarchical directory structure and the
23 information stored therein is replicated on each server in the network.

1 10. (Original) A method for searching for a location of a nearest fixed
2 resource in a wireless network having one or more fixed resources, the method
3 comprising:

4 receiving a request at a network server from a computing unit for a location
5 of a nearest fixed resource;

6 determining a location of the computing unit;

7 searching a hierarchical directory structure containing fixed resource objects
8 for a match with the requested fixed resource, each fixed resource object being
9 stored in the hierarchical directory structure according to a location of each fixed
10 resource;

11 determining which fixed resource object has a location that is nearest to the
12 computing unit; and

13 transmitting data regarding the location of the nearest fixed resource to the
14 computing unit.
15

16 11. (Original) The method as recited in claim 10, wherein the fixed
17 resource objects are stored in the hierarchical directory structure according to a
18 relative location of the fixed resource within a base geographical region in which
19 the fixed resource is located, the base geographical region being stored in the
20 hierarchical directory structure according to an absolute location of the base
21 geographical region, the base geographical region being located within one or more
22 extended geographical regions which are stored in the hierarchical directory
23 structure according to an absolute location of each extended geographical region.
24
25

1 12. (Original) The method as recited in claim 11, wherein the searching
2 the hierarchical directory structure further comprises beginning at a geographical
3 region in which the computing unit is connected, searching the geographical region
4 and, if a matching fixed resource is not found, repeatedly searching a next-largest of
5 the one or more of the extended geographical regions until a match is found or until
6 all the geographical regions have been searched and no match is found.

7
8 13. (Original) The method as recited in claim 11, wherein the searching
9 the hierarchical directory structure further comprises searching only a primary
10 geographical region in which the computing unit is located and any secondary
11 geographical regions that may be encompassed by the primary geographical region.

12
13
14 14. (Original) The method as recited in claim 10, wherein the computing
15 unit is a mobile computing unit operating within the scope of the wireless network.

16
17 15. (Original) The method as recited in claim 10, wherein the data
18 transmitted regarding the location of the fixed resource comprises directions from
19 the location of the computing unit to the location of the fixed resource, the
20 directions being displayable on the computing unit.

21
22 16. (Original) The method as recited in claim 10, wherein:
23 the request is a request for a location of a nearest fixed resource having
24 certain properties;

25

1 the searching further comprises searching for a match of the requested fixed
2 resource having the requested certain properties; and

3 the determining comprises determining which fixed resource object having
4 the requested certain properties represents a fixed resource that is nearest to the
5 computing unit.

6
7 17. (Original) A method of storing fixed resource information about one
8 or more fixed resources of a wireless network in one or more computer-readable
9 media, the method comprising:

10 naming a fixed resource object with an object name that denotes a location of
11 a fixed resource represented by the object, the fixed resource object including
12 properties of the fixed resource; and

13 storing the fixed resource object according to the object name in a
14 hierarchical directory structure in one or more computer-readable media, the
15 hierarchical directory structure having multiple levels, each level representing a
16 geographical region in which the fixed resource is located.

17
18 18. (Original) The method as recited in claim 17, the hierarchical
19 directory structure having a lowest level and a highest level, the lowest level
20 corresponding to a smallest geographical region covered by the wireless network,
21 the highest level corresponding to a largest geographical region covered by the
22 wireless network.

1 19. (Original) The method as recited in claim 17, wherein the network
2 comprises one or more servers containing computer-readable media, and wherein
3 the storing the object further comprises storing the object in the computer-readable
4 media of each of the one or more servers.

5
6 20. (Original) The method as recited in claim 17, wherein the location of
7 the fixed resource is a location that is defined relative to an absolute location.

8
9 21. (Original) The method as recited in claim 20, wherein the absolute
10 location is a geographical region that is located within one or more other
11 geographical regions, each geographical region corresponding to one level in the
12 hierarchical directory structure, and wherein the object name associated with the
13 fixed resource object comprises each geographical location in which the fixed
14 resource is located and the relative location of the fixed resource.

15
16 22. (Original) The method as recited in claim 17, wherein there are
17 multiple geographical regions that are divided into classes, each class corresponding
18 to a level in the hierarchical directory structure, each geographical region belonging
19 to one of the following classes: country, state, territory, county, city, campus,
20 building, area or floor.

21
22 23. (Cancelled)

23
24 24. (Cancelled)

1 25. (Currently Amended) The computer program recited in claim 24 26,
2 wherein the location subsystem comprises a locator that determines a user's
3 location.

4
5 26. (Currently Amended) A location-aware computer program,
6 comprising: The computer program recited in claim 24, wherein the resource
7 database further comprises

8 a location subsystem to determine a location of a user within at least one
9 geographical area;

10 a resource database having records that each contain information about a
11 resource, including a location of the resource, each record being ordered according
12 to the location of the resource represented by the record, and a directory tree
13 structure having multiple levels, each level representing a geographical area; and
14 a query processor that receives a query from the user for a resource that is
15 nearest to the user and returns a location of a resource that is nearest to the user.

16
17 27. (Currently Amended) The computer program recited in claim 24 26,
18 wherein the query processor receives the location of the user and determines which
19 resource is nearest to the user by searching the resource database beginning with the
20 geographical area in which the user is connected to the network and, if a resource is
21 not found, searching at least one other geographical area for a resource matching
22 the query.

1 28. (Currently Amended) The computer program recited in claim 24 26,
2 wherein the location of the resource is a relative location stored with coordinates
3 that are relative to a geographical area which is defined in absolute coordinates.

4
5 29. (Currently Amended) The computer program as recited in claim 24
6 26, wherein:

7 the information about a resource further includes properties of the resource;
8 and

9 the query processor is further configured to receive a query from the user for
10 a resource that is nearest to the user and that has at least one particular property, and
11 to return a location of a resource that is nearest to the user and has the particular
12 property requested by the user.

13
14 30. (Original) A wireless network system, comprising:

15 one or more servers having non-volatile memory;

16 at least one mobile computer located within multiple geographical areas
17 covered by the wireless network system;

18 at least one fixed resource located within the geographical areas, the
19 geographical areas each having an absolute location, the fixed resource having a
20 relative location that is relative to the absolute location of a geographical area in
21 which the fixed resource is located;

22 a location subsystem to determine the relative location of a mobile computer
23 within a geographical area; and

24 a resource database stored in the memory of at least one of the servers, the
25 resource database being organized in a directory tree structure having multiple

1 levels where each of the levels corresponds to a geographical area covered by the
2 wireless network, a highest level corresponding to a largest geographical area and a
3 lowest level corresponding to a smallest geographical area, wherein the relative
4 location of the fixed resource is stored at a level which represents a smallest
5 geographical region in which the fixed resource is located.

6
7 31. (Original) The wireless network system as recited in claim 30,
8 wherein information regarding properties of each fixed resource is stored in the
9 resource database together with the relative location of the fixed resource.

10
11 32. (Original) The wireless network system as recited in claim 30,
12 wherein the relative location of the fixed resource is stored within the lowest level
13 of the directory tree structure.

14
15 33. (Original) The wireless network system as recited in claim 30,
16 wherein the fixed resource is stored in the database as a fixed resource object, the
17 fixed resource object having a name associated with it that includes names assigned
18 to each of the geographical regions that encompasses the fixed resource.

19
20 34. (Original) The wireless network system as recited in claim 30,
21 wherein the fixed resource is stored in the database as a fixed resource object, the
22 fixed resource object including properties of the fixed resource.

1 35. (Original) The wireless network system as recited in claim 30,
2 wherein the absolute locations are represented as longitude and latitude coordinates.
3

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5 36. (Canceled)
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7 37. (Original) The wireless network system as recited in claim 30,
8 wherein each server is configured to:

9 receive a request from the mobile personal computer, requesting the location
10 of a fixed resource that is nearest to the mobile personal computer;

11 determine the location of the mobile personal computer;

12 search the resource database for the location of the nearest fixed resource;

13 and

14 transmit data to the mobile personal computer containing information
15 regarding the location of the nearest fixed resource.
16

17 38. (Original) The wireless network system as recited in claim 37,
18 wherein the data transmitted to the personal computer includes directions from the
19 location of the mobile personal computer to the location of the nearest fixed
20 resource.
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1 39. (Original) The wireless network system as recited in claim 37,
2 wherein each server is further configured to search the resource database for the
3 location of the nearest fixed resource starting at a level in the directory tree structure
4 that corresponds to the geographical area in which the mobile personal computer is
5 connected, if a match is not found, continually searching a next-higher level in the
6 directory tree structure for a match until a match is found or until all the levels have
7 been searched and no match has been found.

8
9 40. (Cancelled).

10
11 41. (Currently Amended) A The database ~~as recited in claim 40,~~
12 comprising:

13 multiple records associated with fixed resources in a wireless network; and
14 a directory tree structure to organize the records according to a location of
15 the fixed resource that the record represents, wherein the directory tree structure
16 comprises multiple levels, each level representing a geographical area covered by
17 the wireless network, a lowest level representing a smallest geographical area in
18 which a fixed resource may be located, and each subsequently higher level of the
19 tree structure representing increasingly larger geographical areas which encompass
20 the fixed resources.

21
22 42. (Currently Amended) The database as recited in claim 40 41, wherein
23 each record representing a fixed resource further comprises properties of the fixed
24 resource represented by the record.

1 43. (Currently Amended) One or more computer-readable media
2 containing the database recited in claim 40 41.

3
4 44. (Currently Amended) A server in a wireless network that contains the
5 database recited in claim 40 41.

6
7 45. (Currently Amended) A wireless network having more than one
8 server, wherein each of the servers contains the database recited in claim 40 41.

9
10 46. (Original) A wireless network as recited in claim 45, wherein the
11 servers are configured to accept changes to the database and, when a change is
12 made to the database in one server, the changed database is replicated in each of the
13 other servers.